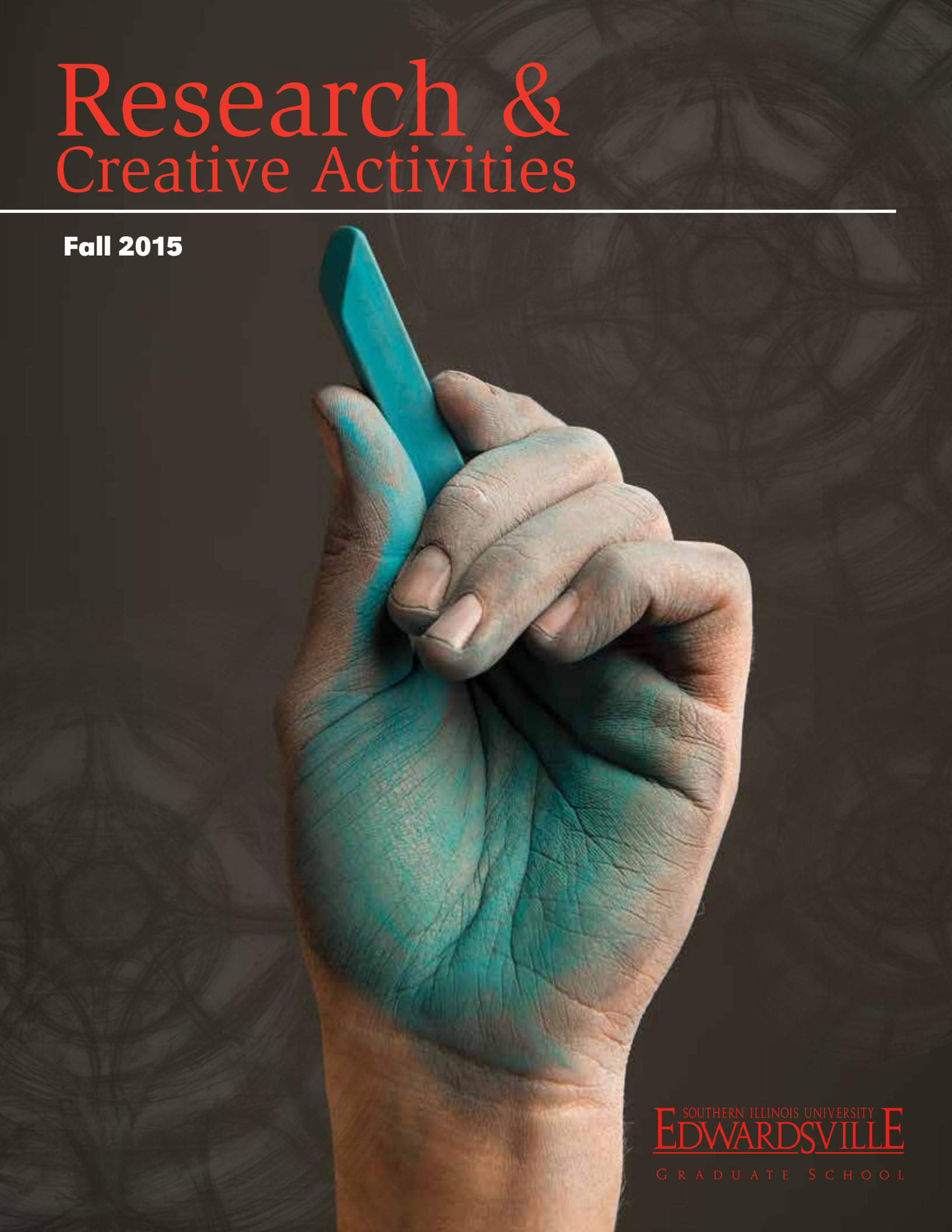
Research & Creative Activities

Fall 2015



SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE
GRADUATE SCHOOL

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Tribute to Vaughnie Lindsay-Skinner, Dean Emerita of the Graduate School (1921-2015)

Contributor: Stephen Hansen, Interim Chancellor and Dean Emeritus of the Graduate School

On August 31, 1973, SIUE President John Rendleman announced the appointment of Vaughnie J. Lindsay, professor of business education, as the new dean of Graduate Studies and Research. Rendleman surprised many on campus by his selection of Lindsay, not only because she was a woman, but also because she came from a professional program during a time when most administrators were men from one of the traditional arts and sciences disciplines. Lindsay proved to be an astute choice. Over the next 13 years, she built the infrastructure to support graduate education and research at SIUE. Lindsay made the Graduate School a source of innovation and energy for the University and an administrative unit widely respected by the faculty for fostering research, scholarly and creative activities.

Born in Prague, Okla., in 1921, Lindsay attended college in Oklahoma and earned her doctorate at Indiana University. She was an associate professor at Oklahoma University until she was recruited by colleagues at SIUE to join them in building a new university. Lindsay came to SIUE in the 1970-71 academic year with the rank of professor. She quickly earned the respect of her colleagues, winning the Excellence in Teaching Award. She served as graduate dean from 1973 until she retired in 1986. Thousands of SIUE students have thrived under her legacy of strong graduate programs. Her critical support of faculty research established the foundation for the teacher-scholar model that characterizes SIUE today. Of the many initiatives she launched for the University, one of them was the idea for, and publication of, Research and Creative Activities magazine.

Vaughnie Lindsay-Skinner died on June 4, 2015. The Vaughnie J. Lindsay New Investigator Award, created in 2008, is a fitting memorial of her legacy to the SIUE community. She was an outstanding teacher, scholar and mentor, and the award carries on her tradition of excellence and her support of programs that benefit faculty and students.

To contribute to the Vaughnie Lindsay New Investigator Fund, contact the SIUE Foundation at siuefoundation@siue.edu or 618-650-2345.

Dean's Message

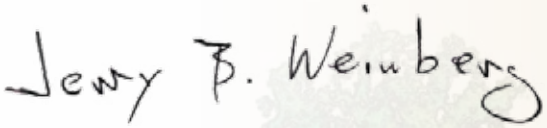
A Tale of Two Hats on One Head with a Single Mind

I have two titles I am very honored and proud to bear for SIUE: Associate Provost for Research and Dean of the Graduate School. I have heard it said many times by colleagues that I wear two hats, one for the University's research and creative activities mission and one for graduate studies. I could not disagree more! These may appear as two hats, but in truth, it is a single hat that strives to fashion an intellectual environment where faculty and graduate students can discover, create and advance knowledge.

As Dean of the Graduate School, I have the responsibility, along with the graduate faculty, to ensure the quality, rigor and expansion of graduate programs; in other words, to create an environment in which graduate students can "explore and advance the limits of knowledge and define the state of the art in every field" [Lewis, et al., p.1]. As Associate Provost for Research, I have the responsibility to ensure the faculty has the tools, services and the climate needed to conduct research and creative activities that also advance the limits of knowledge. Two titles with a single mission! And so, it is appropriate that one person wear these two hats, as they both embody efforts to produce the same fruit. This organizational structure has the advantage of "creating a greater ability to ensure that research activities of the university are well integrated into the academic spirit represented by graduate education" [Lewis et al., p. 15].

The Graduate School is uniquely positioned as the only academic unit with an institution-wide perspective. As a consequence, "the graduate school becomes increasingly important as a place to bring together faculty [and students] from diverse, individual disciplines and to develop new programs for interdisciplinary research and education" [Lewis, et al., p. 6]. Dr. Susan Morgan, associate dean of the Graduate School, and I recently created the master of integrative studies degree, an accomplishment of which we are proud and one we expect to have a lasting impact on SIUE scholarship. The master of integrative studies allows students to access expertise from multiple areas and integrate courses into a degree that explores the boundaries of knowledge at the interfaces between disciplines. The environment created by interdisciplinary studies will provide a rich arena for the faculty and students to produce amazing scholarship.

Included in this issue of Research and Creative Activities are a variety of impressive graduate student projects. These projects represent but a few of the interesting studies and impactful results among the many research and creative activities conducted by our graduate students. And we look forward to presenting the unique work of our graduate students in integrative studies in future issues.



Jerry B. Weinberg, PhD
Associate Provost for Research and Dean of the Graduate School

Lewis, S., R. Sowell, T. Sullivan, P. Tate, and D. Denecke, "Organization and Administration of Graduate Education," Council of Graduate Schools, 2004.

Research Spotlights and News

SIUE Receives Funding to Support Biomedical and Biobehavioral Research Growth

SIUE is poised to have significant impact in biomedical and biobehavioral research (BBR) both regionally and nationally. The University has a unique mix of healthcare and associated disciplines regionally, offering nearly 20 graduate and professional degrees in the biomedical and biohavioral fields. To further SIUE's impact, the University received funding from the National Institutes of Health Biomedical/Biobehavioral Research Administration Development (BRAD) program to expand institutional capacity to support research in health-related fields. The BRAD grant program "promotes the establishment of rigorous and externally supported biomedical and biobehavioral research" by strengthening the research administration infrastructure of institutions and consequently their research faculty.

Named BRIDGE (Building Research Initiatives to Develop Grant Excellence), the SIUE project is creating a network of researchers in BBR across the University and between SIUE and regional research intensive universities that will aid in the retention of highly-qualified faculty and students in the biomedical and biobehavioral fields. Regional partners include Washington University in St. Louis, Saint Louis University, University of Missouri St. Louis, and the SIU School of Medicine.

SIUE BRIDGE Program Regional Partners

SIU School of Medicine
Saint Louis University
University of Missouri St. Louis
Washington University in St. Louis

The increased research activity and collaborations resulting from the project will provide unique experiential learning opportunities for students and mentoring for graduate students and junior faculty. With SIUE's long history of service to the people of the metropolitan St. Louis and southern Illinois regions, many of whom live in the most economically depressed areas in the state, the project has the potential to increase substantially the quality of life in the region while creating significant research results.

Anthropology Professor Wins Fulbright for Project on Afro-Surinamese Dance

Dr. Aminata Cairo, assistant professor of anthropology, has been awarded a 2015-2016 U.S. Fulbright Scholar fellowship for her research titled, "Traditional Afro-Surinamese Dance." Suriname, a small mainland Caribbean country on the northeastern coast of South America, commonly displays cultural wealth through artistic exhibitions, especially through dance. Until the early 2000s, the Afro-Surinamese population was the only Suriname group not allowed to publicly engage in their particular dance traditions, which were considered idolatrous and shameful. From 2003-2005 Cairo and her team visited Suriname to document traditional Afro-Surinamese dance and create a space of validation, acknowledgment and respect for the dance and its people by de-stigmatizing the art form.

Cairo's current project is an expansion of her own previously collected data documenting traditional Afro-Surinamese dances. Her findings will inform a book project that highlights traditional dance and its significance for the identity of Afro-Surinamese people. Validating what has formally been so thoroughly demonized makes an important contribution to Afro-Surinamese identity. Cairo's book will be the first academic publication on this topic and will be published by the Ministry of Culture of Suriname.

Patent Awarded to Chemistry and Electrical and Computer Engineering Team for "Pocket Potentiostat"

SIUE faculty members Mike Shaw and Brad Noble have received a patent (U.S. Patent Serial No. 13/371,230 issued as patent no. 8845870) for their Digital Potentiostat Circuit and System. Shaw (pictured bottom right) is a professor of chemistry; Noble (pictured top left) is an associate professor of electrical and computer engineering.

"We designed a 'no frills' electrochemical and spectroelectrochemical methodology for teaching environments," Shaw said. "The circuit was designed to minimize cost, yet still deliver high-quality data for a limited range of functions suitable for the teaching lab."

Shaw and Noble believed that the scarcity of actual electrochemical practice at the undergraduate level was likely due to the expense to acquire reliable instrumentation. Potentiostats can range in cost from $6,000-$20,000 and more than 20 would be needed to run undergraduate labs.

The basic concepts that can be demonstrated with this device are relevant to studying batteries, fuel cells and solar cells. Their goal is to achieve broad dissemination of units through a commercial partner to reach more undergraduates, high school students and perhaps home-schooled students. Shaw said, "There are a number of inexpensive potentiostat designs in the literature, but none appear to have been adopted broadly, possibly because construction and calibration are intimidating to the novice."

Shaw and Noble are currently in dialogue with a company to commercialize their design. Their patent is one of several recently awarded to SIUE faculty. For details, visit siue.edu/orp/techtransfer.

Graduate Student Research

Darcy Hahn, Applied Communications, Receives Outstanding Thesis Award

Darcy Hahn, a graduating master's student in applied communications, received the Outstanding Thesis Award from the Interpersonal Division of the International Communication Association for her research project titled "Butch in the Streets, Femme in the Sheets: An examination of Lesbian Dating Scripts." The Division's annual honor recognizes a project that encourages theoretical and practical advances in the study of interpersonal communication.

According to Hahn's thesis, which was supervised by Dr. Alicia Alexander, associate professor of applied communication studies, nearly 650,000 same sex couples live in the U.S., and 51 percent are lesbians. Unfortunately, researchers still know very little about how lesbians identify and communicate interest in romantic partners. The purpose of Hahn's project was to discover how lesbian women identify potential partners, how first dates are initiated and carried out, and to find if lesbian women have created some type of romantic dating script.

Results from 12 in-depth interviews with lesbian women between the ages of 18-43 indicated that lesbian women use both hypothetical and interpersonal dating scripts. The scripts were affected by butch and femme identities, as well as high levels of privacy and self-awareness that characterize lesbian women. Highly discussed actions were: initiation between potential partners, preparation for dates and payment methods. Results also indicated that social media not only allows lesbian women to find potential partners, it also helps them to mentally prepare for their date.

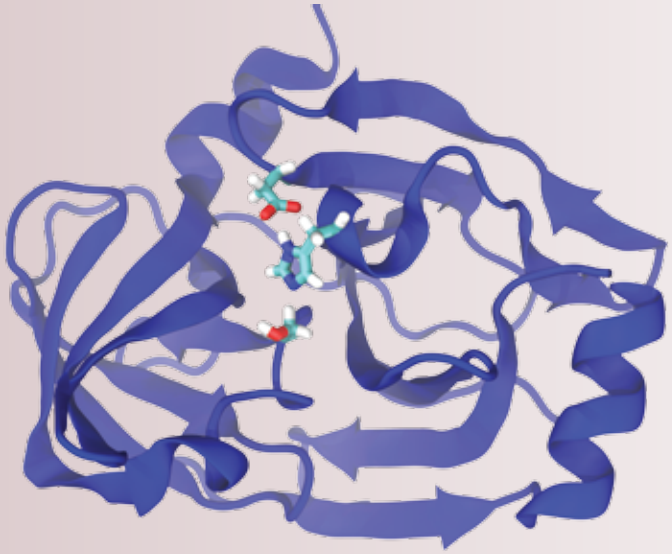
Hahn found that due to the lack of traditional gendered expectations to dictate roles, communication is essential for lesbians when negotiating and assigning acceptable dating behavior.

Atomic Laser Blast!: Understanding Laser and Atomic Cluster Interactions in the X-ray Regime

For Dr. Edward Ackad, the world of atomic ions is a playground where X-ray lasers can reveal new information about how elements interact with each other and how they can be stabilized or destabilized to create new states of matter. Ackad, an assistant professor of physics, is an atomic physicist with an infectious eagerness for projects that involve nanoscopic particles and powerful lasers. He is particularly interested in how X-ray lasers apply energy to and interact with ambiguous atom "clusters," elements that seem to hover between a solid and gaseous state. Funded through a United States Air Force Young Investigator Program (YIP) grant, Ackad's research explores whether X-ray laser blasts can offer new information about how atomic clusters behave when energized.

Ackad explains, "How many atoms does it take to make a solid? It certainly is more than one, but what about 100? If 100 atoms 'stick' together, does that make it a solid? That small number of atoms stuck together can still float in the air, and each cluster can be quite far away from another cluster. So should we say they are a gas or still a solid? Well, both are correct. A cluster is a phase of matter in between solid and gas with very unique properties—especially when blasted with a high-powered laser!"

Compared with a gas, a solid is very dense, making it especially receptive to energy. It is also large enough to dissipate any energy it receives across many atoms.



Dr. Ackad's image of a non-structural protease of hepatitis C is used in a collaborative research study of drug resistivity.

A gas, however, is made of single atoms or molecules. It is difficult to give gas energy due to its low density, but once energy is applied, dissipation of that energy slows and the gas experiences significant effects.

Clusters, being an intermediate state of matter, have the best of both worlds. They are dense like solids, but the small number of atoms means the energy will have a significant effect.

According to Ackad, clusters make great targets for laser beams, as they are easy to hit and energy is not easily dissipated. In recent research, profound effects have been observed when clusters are blasted with ultra-bright reddish-color lasers. Charged atoms accelerate to near the speed of light; high energy neutrons similar to an A-bomb are produced; intense bursts of X-rays are generated; and even antimatter is created.

However, while recent research has uncovered these new phenomena, controversy still exists where the connection between theory and experimental results has broken down. Theoretical advances and some experimentation have enhanced our understanding about the effects of lasers on clusters and these newly observed phenomena, but reproduction of successful experimental models remains problematic. Furthermore, current experimental models cannot tell us if the new phenomena are fundamental to the nature of clusters, or if they are an emergent product of laser-cluster interactions. Ackad wants to settle the decade-long controversy and determine if an existing microscopic model of laser-cluster interactions is valid.

Specifically, Ackad is trying to understand what happens to clusters when they are blasted with an X-ray laser. An X-ray laser detects a cluster differently from a reddish-laser. The reddish-laser sees the cluster as a solid blurry ball, but the X-ray laser sees each atom separately. Ackad's team hopes to determine whether everything that happens when a cluster is blasted with an ultra-bright X-ray laser is predicted by current understanding of atomic physics, or are new physics phenomena created?

Thanks to the YIP grant funding, Ackad is able to recruit SIUE students in Air Force-related fields to participate in the research. For example, Zachary Harwick, a recent physics department graduate, worked with Ackad to explore how charge is transferred from one element

to another element in a cluster that is layered with xenon atoms in the middle and a shell of argon atoms around them. Though the X-ray laser is at just the right setting to target the xenon atoms and thus highly charge them with energy, in the experiments, it was the argon atoms showing the highest charge after the laser blast. Harwick used high-performance computing to peer into the cluster as it was hit by the laser to determine how the charge was transferred from xenon to argon atoms.

Kasey Barrington, a senior majoring in physics, is looking at how the symmetry of the cluster changes the way it disintegrates. Spherical clusters disintegrate spherically, but how do elliptical clusters disintegrate? Barrington also uses high-performance computing to examine the cluster from start to finish to see how the shape changes and how the charges are distributed. This fits into the wider scientific context of free-electron lasers since many proteins which will be studied are not spherical, and other research groups may use X-ray lasers to determine the 3D structure of those proteins. Knowing how a protein will disintegrate will help optimize the 3D image process in order to better see virus details. This may be crucial in understanding how viruses work and in developing drugs to stop them.

Ackad and his team are attempting to validate (or invalidate) an atomistic model of laser-cluster interactions to determine if there is any evidence for new, fundamental phenomena that are not emergent properties of the laser-cluster system. According to Ackad, the tools and models his team proposes to develop may make them one of the first U.S. groups capable of detailed microscopic descriptions of these atomic interactions.

In recent research, profound effects have been observed when clusters are blasted with ultra-bright reddish-color lasers.

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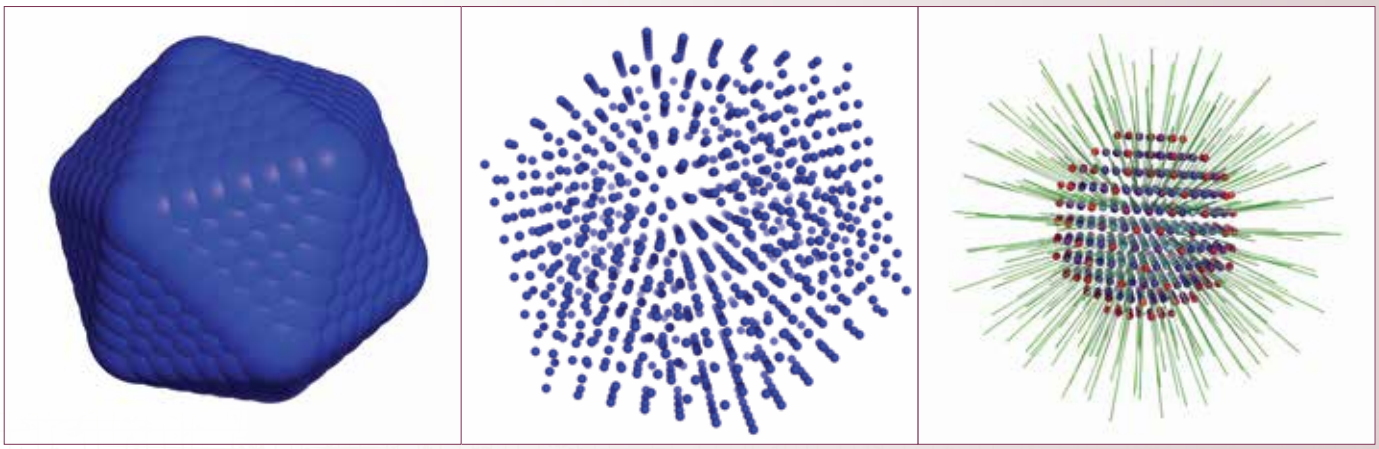
Dr. Edward Ackad wants to settle the decade-long controversy and determine if an existing microscopic model of laser-cluster interactions is valid.



Depictions of a cluster, where the spheres are the atoms (different sizes of atoms are used to show the shape more clearly) making the cluster a nanoscopic icosahedral chunk of matter.

Spherical cluster with green lines showing what directions the atoms will follow once it disintegrates.

SIUE and Illinois Community Colleges Advance Technical Degrees in Biotechnology and Water Management

Who is tomorrow's skilled worker?

The ever-widening global economy has not only transformed the kinds of industrial sectors needed to meet the needs of our global society, it has also ushered in new challenges to today's workers, changing the landscape of high-skill technical careers.

We know that foreign trade agreements, for example, have shifted many former industrial production centers outside of the U.S., impacting U.S. workers and their communities. Lower skilled workers who have lost jobs due to foreign trade agreements as well as returning veterans are facing a market that demands higher skill sets for an advanced digital and technological age. Furthermore, new social and environmental challenges are influencing the growth of new industrial solutions to those challenges.

As they prepare the next generation of workers, today's higher education institutions must anticipate the needs of an ever-evolving global industry and the demand for highly skilled technicians to meet difficult challenges.

SIUE and four other higher education institutions spanning the state of Illinois are committed to building a pipeline of job-ready careers in the bioeconomy, specifically in the areas of bioprocessing and water management.

In Illinois, the bioeconomy is a driving force for economic development and innovation. According to sources such as the National Renewable Energy Laboratory, the Renewable Fuels Association and the Illinois Rural Affairs Association, the 14 biofuels plants across Illinois supply more than 54,000 jobs, generating more than $5 billion in total economic output. Illinois is also home to a vast array of water resources, making surface water, groundwater and watersheds a significant part of the state's ecosystem and economy.

SIUE is the lead institution on a new initiative funded by a U.S. Department of Labor's Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant: the Building Illinois' Bioeconomy (BIB) consortium. Led by The NCERC at SIUE: Advancing Biofuels Research and the Environmental Resources Training Center (ERTC), BIB consortium members include:

BUILDING ILLINOIS' BIOECONOMY CONSORTIUM

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

SOUTHEASTERN ILLINOIS COLLEGE

Lincoln Land Community College

LEWIS&CLARK COMMUNITY COLLEGE

CARL SANDBURG COLLEGE

> "The real value in this partnership is the opportunity to build on each institution's unique strengths and to learn from one another's experiences. Community colleges excel at preparing students for the workforce, a trait shared by ERTC and NCERC."
>
> Courtney Breckenridge, TAACCCT Grant Primary Investigator
> Assistant Director of Communications and Client Relations, The NCERC at SIUE

Thanks to a recent grant award totaling $9,956,011 from the TAACCCT program, the BIB consortium, in consultation with industrial partners, will be able to launch new initiatives to enhance technical degree certification in biotechnology and water management and enable the training and retraining of low-skilled or displaced workers to meet the growing demands of these industries.

The program is envisioned to support trade-impacted (TAA) workers who lost their jobs due to a trade event as determined by the U.S. Department of Labor. These workers lost their jobs through no fault of their own and many are actively pursuing training for new careers. Additional priority students for this program include veterans and long-term unemployed workers seeking a skills-upgrade to become more competitive in the workplace.

The Building Illinois' Bioeconomy (BIB) consortium aims to:

- Use the collective strengths and resources of each partner school and a network of committed employers to prepare graduating students to be competitive applicants in these expanding industries
- Collaborate with private sector companies, such as Monsanto, Abengoa Bioenergy, Philips 66 and Illinois American Water, to standardize curriculum according to industry-recognized credentials and ensure that students gain the skills they need to compete in today's job market
- Work closely with workforce development agencies, veterans' commissions and trade organizations to connect students with the resources and support network needed to succeed.

Key among BIB consortium goals is the effort to facilitate a quicker pathway to degrees and create a streamlined credentialing system.

Existing degree programs at each member institution will be expanded and enhanced to create a seamless integration of various certification and degree levels within student areas of interest. The BIB consortium will create multiple avenues to degrees, allowing students enrolled at one member institution to transfer credits to another institution, ensuring a shorter timeline to earning intermediate certifications, associates' or bachelors' degrees.

In outlining the BIB consortium's educational advantages, Courtney Breckenridge, assistant director of communications and client relations at NCERC and the TAACCCT grant's primary investigator, said, "The real value in this partnership is the opportunity to build on each institution's unique strengths and to learn from one another's experiences. Community colleges excel at preparing students for the workforce, a trait shared by ERTC and NCERC.

"Meanwhile, SIUE offers the benefits of a four-year university and a pathway for those community college students who are ready to take the next step in their education. Together, we are able to offer a range of career pathways in a variety of industries so each student can select the right path for his or her specific needs and goals."

Program innovation is aimed at serving the working student and accomplishing degrees in tighter timeframes. At Southern Illinois College, for example, bioprocessing technology students will experience flexible enrollments and modular courses established to allow them to enroll at any time and complete requirements in a manner more fluid than the rigid semester system. Students enrolled at member institutions may encounter means to earn stacked and latticed certifications. Online and hybrid classes will use technology to accommodate the working professional. Contextualized, accelerated remedial coursework will be established to give students a real-world context for basic skills such as mathematics and communication. Math may be taught in the context of a welding course, for instance. Programming will also enable students to have important hands-on learning experiences through internships and training with innovative technologies.

Advancing Technical Degrees in Biotechnology and Water Management (continued)

A prime example of the BIB consortium's benefits is SIUE's enhancement of its long-standing partnership with Lewis and Clark through hands-on student training programs at NCERC and ERTC.

At ERTC, the state's designated center for drinking and wastewater treatment systems training, grant funds will support the transition to online classes and new technology. Transitioning much of ERTC's programming online will enable the program to serve students across the state, and possibly the nation.

Students who enroll in ERTC's one-year operator program at SIUE are co-enrolled at L&C to allow for a seamless transfer between the one-year program and L&C's Environmental Treatment Technologies: Water Treatment A.A.S. The partnership combines water treatment training at ERTC with the business and management classes at L&C to train students for careers such as treatment plant manager or public works director.

At NCERC, a nationally recognized research center dedicated to the development and commercialization of biofuels and other renewable compounds, grant funding supports the utilization of the center's pilot plant as a "micro refinery" for students from L&C's Process Operations Technology (PTEC) program. With PTEC, students gain hands-on training on critical unit operations used in the petroleum, ethanol and other PTEC industries. NCERC is offering a 10-day internship program in which students will come to the facility each day, working on shift as they would in a true industrial setting and learning through a combination of actual process operations and training modules designed by SIUE's staff in conjunction with L&C's instructors. By operating the pilot-scale research and production facility, student interns get to experience and learn the literal ins and outs of process technology.

"This grant represents a tremendous opportunity for SIUE, Lewis and Clark, and the entire region," said NCERC Executive Director John Caupert. "By merging the strengths of NCERC and the PTEC program, we will create unprecedented learning experiences for students that couple hands-on learning experiences and innovative online learning tools delivered by world-class educators and industry leaders."

In addition to the 10-day applied internships at NCERC, L&C's PTEC students are also taking part in hands-on laboratory classes hosted at NCERC. During the spring 2015 semester, students in L&C's "Systems" courses began splitting their class time between L&C and PTEC, merging traditional textbook learning with real-life demonstrations from industry experts. The student response to the new format has been overwhelmingly positive.

"For many years our students have fulfilled internship opportunities at NCERC, but providing them with the opportunity to fully operate this advanced microrefinery will elevate our program to an entirely new level of education and skills training," L&C Dean of Science, Technology, Engineering and Math Sue Czerwinski said. "This hands-on experience will give L&C graduates an unparalleled training opportunity."

> "This grant represents a tremendous opportunity for SIUE, Lewis and Clark Community College, and the entire region."
>
> John Caupert, Executive Director
> The NCERC at SIUE

Collegiate Athletes and Mental Health Issues: What are the Risks?

The mental health of the nation's collegiate athletes is a topic of significant media attention in recent years. In 2014, Madison Holleran, a freshman track athlete at the University of Pennsylvania, was only 19-years-old when she took her life. That same year, Kosta Karageorge, defensive lineman for The Ohio State University, died at 22, a suicide presumably linked to concussions and confusion.

Tragic stories such as Holleran's and Karageorge's have pushed the issue of mental illness in college athletes into the mainstream media and to the attention of the NCAA, which established its own Mental Health Task Force in 2013. While college is already considered an at-risk time for the development of mental illness, the significant demands placed on college athletes may represent additional risk factors for mental illness in this population. Injury, poor performance and the stress of balancing academic commitments with elite athletics are a few unique issues athletes face on a daily basis. Despite growing recognition from governing collegiate organizations, existing research into the realm of athletes' mental illness, specifically depression, is thin.

Charlie Cox, a kinesiology and health education graduate student, is working under the guidance of Dr. Lindsay Ross-Stewart, assistant professor of kinesiology and health education, to poll a national sample of NCAA college athletes across the country. Cox hopes to determine a prevalence rate for depression symptoms and assess various risk factors for college athletes. These factors include gender, race, academic class, sport competition status, scholarships received, injury and depression history. Additionally, athletes are asked to provide their opinion regarding the accessibility of mental health treatment education and other support structures within their universities.

Cox's study will provide national insight into the current level of care and mental health support received by college athletes and highlight potential areas of improvement for university administrations seeking to meet the needs of their student athletes.

SUICIDE **#2** leading cause of death among college students (behind accidents)

National Alliance on Mental Illness

NCAA College Athletes Who Reported

33.2% Occurrence of depression symptoms

3.7% A diagnosis of depression in the past 6 months

44.5% Not receiving education regarding mental health issues as a college athlete

25.7% Not knowing how or where to access treatment at their university

Casey Nixon, Psychology, Awarded SIUE 2014 Outstanding Thesis Award

Casey Nixon, a recent master's program graduate in psychology and recipient of the SIUE 2014 Outstanding Thesis Award, studied the impact of gender on perceived severity of sexual harassment in the workplace and associated recommended punishments. A 2012 poll by the Society for Human Resource Management revealed that, within the past two years, at least 25 percent of organizations reported an increase in sexual harassment claims. Nearly 20 percent of organizations stated that sexual harassment claims were not only by women but men as well.

Under the guidance of Dr. Lynn Bartels, associate professor of psychology, Nixon compared perceptions of male-to-female sexual harassment claims and female-to-male claims, exploring how gender might affect the way individuals recommend punishment for sexual harassment. Nixon explored how female and male study participants might recommend punishment, as well as how recommendations for punishment vary depending on whether it was a male-to-female sexual harassment or a female-to male scenario.

After reviewing 151 participants' perceptions of various sexual harassment scenarios, Nixon found that as sexual harassment increased in severity, harsher punishments were recommended. Often, the severity rating depended on power relationships between initiator and victim, frequency of behavior and physical contact. The men and women participants did not differ in punishment recommendations based on perceived level of severity, but women did view sexual harassment in general more severely than men. Additionally, the participant's gender affected how he or she perceived the severity of the sexual harassment, a factor that correlated with the gender of the initiator.

Nixon's findings suggested that female-to-male harassment was viewed as less severe than male-to-female harassment. However, women participants recommended higher punishments for female harassment initiators than did their male counterparts. Male and female study participants did not differ in their perceptions of the severity of male-to-female harassment scenarios. Nixon's results suggest that both genders may be starting to view male-to-female harassment more equally, possibly due to increased education and awareness of sexual harassment.

This study makes an important contribution to psychology literature by comparing men's and women's perceptions of both male-to-female and female-to-male sexual harassment. Prior research in this area has only focused on male-to-female harassment, and with more females reaching managerial ranks, this topic becomes highly pertinent to organizations as they design sexual harassment policies.

Examining a Link between Eating Disorders and Father-Daughter Relationships

A recent study by Abigail Nedved, a graduate of the psychology master's program, examined the potential connection between eating disorders and father-daughter relationships. According to Nedved, there are serious physical and psychological consequences associated with eating disorders, including malnutrition, dental complications and even death. Aided by a 2015 SIUE Research Grant for Graduate Students and under the mentorship of Dr. Laura Pawlow, associate professor of psychology, Nedved's research specifically explored the father-daughter relationship in women of various weight statuses. The study compared the father-daughter relationship and how it may affect daughters who are overweight, normal weight and/or have an eating disorder.

In order to explore this relationship, Nedved recruited a sample of 76 women; 50 did not have an eating disorder and 26 had an eating disorder. The study examines the difference between body mass index and the results from three different measures regarding paternal style and the father/daughter relationship.

Nedved hypothesizes that women who do not have an eating disorder will report healthier relationships with their fathers on all variables. She further predicts that fathers of daughters with an eating disorder are more overprotective and less emotionally available.

Looking West:
Black Female Activism and the Long Black Freedom Struggle in Oakland, California

In the summer of 1976, Harvard University's Schlesinger Library began recording the autobiographical memoirs of a group of black women 70 years of age and older. The project aimed to create a body of resource material on the lives and contributions of black women in the 20th century, especially in the years prior to the "modern Civil Rights Movement."

Included among the 72 interviewees was longtime East Bay California resident Frances Albrier. At the time of her first interview in November 1977, she had been an avid opponent of racial injustice in the city of Oakland and the broader East Bay for more than 50 years. She, however, was not alone in her work but was part of a lineage of women who had been integral to the African-American push for equality and civil rights since the mid-19th century. Unfortunately, according to Dr. Jessica Harris, this activist legacy has been eclipsed in existing studies of the black freedom struggle, hidden behind narratives of World War II migration and the rise of post-war black militancy. Harris, assistant professor of historical studies at SIUE, exposes this veiled history by placing women like Albrier at the center of her new book's exploration of the black freedom struggle in Oakland, Calif., prior to World War II.

Unquestionably, World War II mobilization dramatically transformed the social, political and economic landscape of California's East Bay. Employment opportunities in shipbuilding and canning manufactories, among others, attracted thousands of migrants to the area, especially African-Americans. The increase in black visibility heightened racial tension in the region—hostilities that were exacerbated with the onset of post-war deindustrialization.

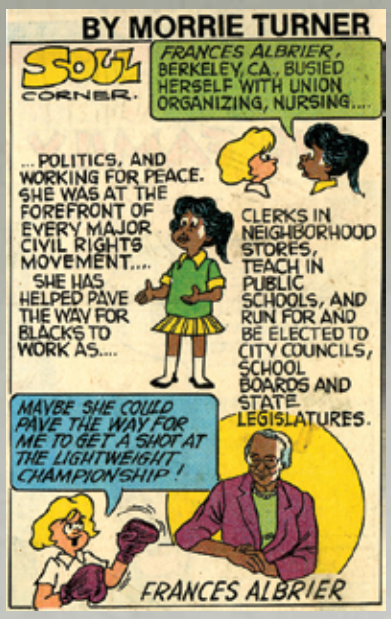
African-Americans formed new organizations integral to the black freedom struggle; the most notable among these was the Black Panther Party founded in the fall of 1966. The Panthers' calls for self-determination and power gave voice to a generation of African-Americans for whom poverty, racial segregation, police brutality and neighborhood decline constituted their daily lives. Given their importance to post-war black politics, it comes as no surprise that most scholarship written on the black freedom struggle in Oakland and the East Bay has focused on the Panther movement.

Recently, however, scholars have begun to situate the founding of the Black Panther Party within a broader timeframe of activism in the black community. While it is true that a unique set of actors and circumstances during the '40s and '50s helped influence the direction of the black freedom struggle in later years, Harris argues that, in order to fully understand the activist environment that gave rise to the Black Panther Party, we must begin the story much earlier and with the contributions of black women.

Whether founding their own organizations, working within "mainstream" ones or laboring alone, black women employed traditional and nontraditional methods of activism to develop their visions of change. In their challenges to inequality in the areas of labor, healthcare and education, they not only contributed to the intellectual process of strategy building, but also expanded the agenda of black freedom beyond matters of race. In the end, their individual and collective work advanced the cause of black citizenship in Oakland prior to World War II and also laid the groundwork for the movements that ensued thereafter.

In addition to making visible this local history, Harris' project continues the work of scholars who have challenged the dominant, national narrative of the Civil Rights Movement. Her text reveals a movement that was led by women before the 1950s and beyond the geographical constraints of the South. In adding another piece to this puzzle that is the long black freedom struggle, Harris hopes that her project brings an awareness to the various ways in which black women throughout history have actively shaped and reshaped their environments in an effort to make it more just and equitable for the scope of humanity.

While it is true that a unique set of actors and circumstances during the ’40s and ’50s helped influence the direction of the black freedom struggle in later years, Dr. Jessica Harris argues that, in order to fully understand the activist environment that gave rise to the Black Panther Party, we must begin the story much earlier and with the contributions of black women.



Collection of the Smithsonian National Museum of African American History and Culture, Frances Albrier Collection

For My People:
Creating a Correspondence Program to Illuminate African-American Poetry

If exposed to African-American poetry at all, young students in American and African-American literature courses are usually presented with historically significant poems in a single anthology. They read Langston Hughes' "The Negro Speaks of Rivers," Margaret Walker's "For My People" and Gwendolyn Brooks' "We Real Cool," for instance, from the most recent addition of the Norton Anthology of African-American Literature. The extensive publishing histories of such poems, however, often escape the attention of professors and students whose views of the publishing journeys of the poems are necessarily limited by time and resource constraints. Accordingly, important aspects of literary history become and remain hidden.

Dr. Howard Rambsy II, associate professor of English language and literature, has worked to illuminate some of these hidden aspects of literary history and to engage new young audiences in a rich legacy of cultural expression. He has produced several research studies and public programming projects related to African-American literary studies, especially poetry. Rambsy's most recent project, the Illinois Poetry Correspondence program, which received funding from the Illinois Humanities Council, seeks to encourage young black men to become more actively involved in humanities programming. The project is a partnership with Drs. Tisha Brooks and Elizabeth Cali, assistant professors of English language and literature at SIUE.

The program, running from 2014 through the end of 2015, targets young black males and includes approximately 24-30 high school students and 25 college students in reading and composition activities focusing on African-American poetry. The project mobilizes a wide network of teachers and students across Illinois to gain a deeper understanding of black writing and poetry.

Using literature studies as a way to engage and activate community has long been a motivation in Rambsy's scholarship. His first book, The Black Arts Enterprise (2011), concentrates on an African-American literary and cultural movement of the 1960s and 1970s. Many of the leading participants of that movement, including Amiri Baraka, Sonia Sanchez and Nikki Giovanni, believed in making poetry and the arts readily accessible to general audiences. This spirit of grassroots arts organizing became central to Rambsy's own views on public programming.

As he has researched and taught black poetry over the years and sought to educate a broad audience through writings and commentary in his blog The Cultural Front, Rambsy realized that, despite efforts of many organizations, large numbers of African-American students still lack exposure to rewarding, culturally-distinct humanities projects. Many of the students he encountered noted that they had received inadequate exposure to African-American books and topics in high school and college. In response, Rambsy began thinking of ways to orient students to African-American poetry early in their college career. The program represents an effort to reach undergraduates early and expose high school students to poetry.

The program extends Rambsy's previous projects by involving high school students and college students in common reading and composition activities. During the initial phase of the project, college students read and provide commentary on volumes of poetry. In the next phase, high school students read the same volumes of poetry, as well as the commentary produced by the college students. The high school students, in turn, produce commentary on the volumes, which college students read. Such correspondence allows a widespread conversation to occur across the state of Illinois, generating a network of black youth learning from each other and using poetry to create an understanding of literary history and community.

"This program gives participants access to a few different important learning opportunities," said Rambsy. "The students receive early exposure to volumes of poetry by black writers. That early exposure is both unique and important. In addition, the participants receive the uncommon opportunities of reading a wide range of commentary on poetry by young black men. Finally, the participants have a chance to compose statements about poetry that will be read by a distinct community of readers.

"The experiences of learning from and contributing to this poetry community are proving to be a tremendous educational benefit for the students."

Overall, the Illinois Poetry Correspondence program combines Rambsy's scholarly interests and blogging activities on poetry and makes aspects of that work tangible for high school and college students. The histories of African-American poetry and literary studies involve putting readers in touch with a broad range of ideas and cultural expressions. The program extends those histories by giving students opportunities to read and write about poetry.

Dr. Howard Rambsy II has worked to illuminate some of the hidden aspects of African-American literary history and to engage new young audiences in a rich, but lesser-known legacy of cultural expression.

Riot Bias:
A Textual Analysis of Pussy Riot's Coverage in Russian and American Media

When Pussy Riot, Russia's punk-influenced artist collective, walked into Moscow's Cathedral of Christ The Savior in February 2012 to record "Mother of God, Cast Putin Out!" a firestorm of controversy erupted. The event brought international awareness to the relationship between President Vladimir Putin, the Orthodox Church and the Russian court system, as well as the severity of punishment for speaking out against that nation's leader.

In an effort to understand those issues – and the significance of Pussy Riot using the punk genre as its protest catalyst – SIUE mass communications alumna Kari Williams researched this topic for her master's thesis under the mentorship of Dr. Suman Mishra, assistant professor of mass communications. Williams analyzed nearly 100 news articles from Russian and American sources. She explored Russian and American perspectives on Pussy Riots' actions, press and political relations between Russia and the U.S., political activism through music, punk music, and the Russian punk scene.

Williams analyzed coverage from Russia's Pravda and The New York Times relating to the band's actions, beginning with the cathedral protest in February 2012 and ending with a protest at the Sochi Olympics in February 2014. The analysis provided context for the ways in which Russian and American officials "sparred" over the treatment of the imprisoned women and spoke to each other via media coverage. Pravda treated the band's actions as blasphemous and childish and the West as hypocritical and meddling. The New York Times called the act political dissent, portraying Russia and Putin as violators of human rights and artistic expression.

Williams found that Pussy Riot served as a catalyst, turning political and cultural differences between the countries into a flashpoint. Her findings highlight where bias exists and how politicians speak to each other by way of media coverage. Such explorations bring awareness to global media biases, providing insight into portrayals of activism and political relations between the U.S. and Russia.



How Dance Might Increase Learning

Researchers have long recognized the direct impact emotions have on teaching and learning for children. Both art making and dance movement have successfully been used to help children identify their emotions and promote abstract thinking, learning and problem solving. However, there is little research on the effects of using dance movement with art to create a visual image. Hillery Gernhauser Jones, a graduate student in art and design, is exploring how using dance movement and art making together can affect children's moods and be used as a multifaceted way of learning and problem solving.

Aided by a 2015 SIUE Research Grant for Graduate Students and under the guidance of Shelly Goebl-Parker, professor of art and design, Jones explored dance movements used to create visual art involving approximately 60 children ages 9-12 at a Creative Arts Summer Camp hosted by the Metro Theater Company. Children were given the opportunity to positively contain their energy by moving and mark-making with loose charcoal on a canvas located on the floor. Jones will analyze the effects in mood evoked by the project. According to Jones, the study could inform how similar movement and mark-making coincide with emotions, moods and feelings.

Both art making and dance movement have successfully been used to help children identify their emotions and promote abstract thinking, learning and problem solving.

However, there is little research on the effects of using dance movement with art to create a visual image.

Promising Math Teacher Candidates Selected for Scholar Program:

Seven SIUE Math Teachers-in-Training Were Named Noyce Scholars for 2014-15

The SIUE Robert Noyce Mathematics Scholarship Program, totaling $1.1 million from the National Science Foundation, helps recruit and prepare 40 mathematics teacher-candidates over a five-year period for work at the middle- and high-school levels in underperforming urban and rural schools. Scholars receive $11,500 for educational expenses annually for up to two years, along with additional support through mentoring by expert teachers, travel to professional conferences and other resources.

Noyce Mathematics Scholars chosen for 2014-15 are William Fithen of Granite City, Ill.; Jasmine French of Zion, Ill.; Jon Heeg of Columbia, Ill.; Mara Holloway of Belleville, Ill.; Michael Nichols of Collinsville, Ill.; Ryan Sleeper of Trenton, Ill.; Rachel Unverfehrt of Hoyleton, Ill.; and Alexandra Washington of Homewood, Ill.

Dr. Liza Cummings, assistant professor of curriculum and instruction, leads the Robert Noyce Scholarship Program for mathematics teacher-candidates. The program was awarded in August 2014, becoming an appropriate companion to a similar SIUE Noyce program aimed at recruiting and preparing future science teachers. The new training program for future math teachers represents a partnership between the SIUE College of Arts and Sciences; the SIUE School of Education, Health and Human Behavior; the SIUE STEM Center; master teachers; community-based organizations; local community colleges; and cooperating school districts.

"The Robert Noyce Scholarship Program for mathematics teacher-candidates encompasses many features of the original SIUE Noyce Science Program," Cummings said. "However, the Robert Noyce Mathematics Scholarship Program includes a partnership with Lewis and Clark Community College (L&C) to give candidates early and additional opportunities to work with students. Junior-level scholars are expected to tutor students at L&C within the area of mathematics."

"The Noyce Math Scholars will have the opportunity to travel to a math conference, such as MathFest, during their junior year to expose them to math research that undergraduates are participating in throughout the country," said Dr. Tammy Voepel, associate professor of mathematics and statistics. "During their senior year, they will have the opportunity to attend a math education conference and learn from practicing teachers and math education researchers."

Scholarship applicants undergo a rigorous evaluation process according to Dr. Sharon Locke, director of the Center for STEM Research, Education and Outreach. Scholars are selected based upon criteria such as outstanding intellectual and teaching potential and the ability and interest to teach in a high-needs setting. Another defining characteristic in a Noyce Scholar, said Locke, is the individual's ability to serve as a role model for students in targeted districts.

Noyce Scholar graduates will teach in underperforming urban and rural school districts in southwestern Illinois. The targeted districts are those in economically distressed cities with a large minority population and cities with high poverty rates and low high school graduation rates on the Illinois side of the Mississippi River. In East St. Louis, for instance, only six percent of students meet performance standards for mathematics on state examinations (ISBE, 2013). These high-needs school districts have an urgent need for quality teachers who can inspire young students to pursue STEM careers.

"Scholars gain additional teaching experience working in the STEM Center's outreach programs. The 2014-15 Noyce Scholars are outstanding individuals who have demonstrated a passion and commitment to STEM education," Cummings said. "Connecting SIUE undergrads with K-12 students in the region is a great way to promote STEM as a career choice. Noyce Scholars will help deliver hands-on activities that spark interest in math among young children."

"Stepping-Up" to the Challenge:
School of Engineering's Peer Education Strategies and Early Math Interventions Retain and Prepare Future Engineers

According to the U.S. Bureau of Labor and Statistics, students pursuing engineering fields can anticipate higher than average job growth. Fields such as civil, environmental, mechanical and biomedical engineering are predicted to grow 15-24 percent before 2020, offering tremendous opportunity for recent graduates.

In contrast to the projected job growth, the interest in engineering as a major has remained steady over the last few decades, and the number of students prepared for the rigorous curriculum of engineering programs has not kept pace. Students arrive at their universities with less than adequate skills in mathematics and physics, leading to high dropout rates from the very gateway courses that could lead them into engineering.

Civil, environmental, mechanical and biomedical engineering job

GROWTH

15-24% by 2020

SIUE's School of Engineering and College of Arts and Sciences are working to improve the retention of undergraduates showing interest in engineering by enhancing academic support and mentorship for students. Project STEP-UP, or Student Teams Engaging Peers for Undergraduate Progress, is funded by the National Science Foundation and aims to markedly increase the success and retention of undergraduates who decide to study engineering.

STEP-UP

Student Teams Engaging Peers for Undergraduate Progress Aims to **significantly increase** success and retention of undergraduate engineering majors funded by the National Science Foundation

The STEP-UP Program targets common reasons undergraduate students do not advance into engineering programs. The project is led by Dr. Seref "Cem" Karacal, associate dean of engineering and professor of industrial engineering. Co-investigators are Drs. Zenia Agustin and George Pelekanos, professors of mathematics and statistics; Dr. Ryan Fries, associate professor of civil engineering; and Dr. Ryan Krauss, associate professor of mechanical engineering.

When a new undergraduate student selects engineering as a field of study, he or she faces numerous challenges that may lead to a loss of interest in engineering.

Studies show that, across institutions, the most common reasons for failing to pursue engineering include: inadequate preparation at the high school level; financial struggles; difficulty adjusting to college life; no sense of belonging to the engineering community; and a lack of support networks, including mentors.

It is no wonder that undergraduates nationally are dropping out of the engineering major pathway even before completing basic mathematics courses.

Aware of the national trend, faculty members in the School of Engineering and College of Arts and Sciences analyzed the performance of engineering students in gateway math courses and found that success rates in these courses were low. Between 2005 and 2012, freshman who began their university careers in pre-calculus classes were retained in engineering major pathways at a mere 40 percent success rate; in calculus I, a 51 percent success rate; and in calculus II, a 68 percent success rate.

Seeking to improve these numbers, they conceived a project that would take a multi-tiered approach to retaining undergraduate engineering majors.

"Stepping-Up" to the Challenge: (continued)

In 2012, the team submitted a proposal to and received funding from the National Science Foundation's Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP), a grant program designed specifically to increase the number of students completing degrees in engineering and computer science. The team launched their $830,000, five-year STEP-UP project in 2013, beginning initial intervention strategies and their plan to create a more supportive network for students in the pre-engineering pathway.

Central to the STEP-UP program is the idea that tracking and early intervention for students enrolled in basic mathematics classes would buttress those students who qualify for engineering majors but might be struggling with calculus.

The team has tapped into several existing campus resources as well as created new avenues to provide student support through enhanced tutelage and guidance from multiple angles. First, the team implemented specialized enrichment sessions following lectures for students in calculus I and calculus II who have already declared an engineering major. These supplemental sessions provide specialized learning opportunities for students in an engineering major, giving them extra problem solving opportunities.

Staffed by undergraduate student leaders, the enrichment sessions use peer support to create a collaborative and mutually affirming environment. The strategy targets the entire class of students, aiming to raise the overall achievement of the cohort rather than that of individual strugglers.

In addition to enrichment sessions, specialized practice modules and evening math tutors are also available to all engineering freshmen as they work through practice problems on their own. Previously, tutors were only available in limited amounts through the Math Resources Center. STEP-UP now provides access to additional peer tutors, recruited from high-performing upper classmen, to provide individualized coaching five days per week in a residence hall with many engineering student residents. Additionally, peer mentors organize study groups and extracurricular activities aimed to generate a sense of community and comfort within the university environment.

Second, the team worked to develop opportunities for mentorship offered through a network of engineering faculty and working professionals. The School of Engineering recruits faculty members to advise students on questions related to the engineering profession and guide them through their curricular development.

The STEP-UP funding now enhances the mentorship program by regularly connecting engineering freshman with industrial mentors, working professionals who demonstrate concrete examples of how to apply mathematics, physics and engineering concepts in their everyday jobs. Last year, 16 professional engineers from across the region visited SIUE to interact with students.

Co-op and internship opportunities accompany these industrial connections, introducing valuable work experience to upperclassmen before they enter the job market. Most importantly, mentorship models such as these boost student investment in and understanding of the field, while drawing them into a network that offers future pathways for SIUE engineering graduates.

By relying on peer tutors and mentors, Karacal's team designed a program to provide social support and access for students transitioning to a challenging campus life. These relationships also benefit the student leaders themselves, who may experience increased understanding of material, improved communication skills and confidence. The team's hope is that enrichment sessions and peer mentoring will reduce students' math anxiety while improving their proficiency in the subject, thus increasing the success rate in calculus courses.

Though only in the first half of the project, preliminary results show that STEP-UP is having compelling returns on student retention and success in the target courses. Outcomes from the first two years of the math enrichment program suggest that the passing rate in the engineering sections of calculus I has increased about 15 percent and 16 percent more students are getting As and Bs when compared to regular sections of the course.

"Our overall objective of the project is to increase the number of engineering graduates. As this number improves, so will the economic well-being of our immediate geographic region and the nation."

–Dr. Cem Karacal

The impact of the enrichment sessions on calculus II is even stronger with 18 percent more passing the course and about 18 percent more getting As and Bs. Furthermore, the freshman retention rate for those who started in engineering in fall 2013 and fall 2014 were 87.4 percent and 90 percent—well above the historical rate of 76 percent.

Although hard to measure, the impacts of other interventions—social supports and peer mentorship—can be traced in the subtle ways students identify with the engineering community. An opinion poll suggests that most students participating in the mentoring program found the program very helpful. But perhaps more significant is the fact that the freshman cohorts are already participating in engineering design teams, such as the Mini Baja and Solar Car teams, and student organizations, such as the Society of Black Engineers and the Society of Women Engineers.

Other indicators of success can be seen in the projects students produce from their learning experiences. In February 2014, a group of students from the original STEP-UP cohort launched a weather balloon during the Engineering Building Annex ribbon cutting ceremony. Thus, three semesters after enrolling at SIUE, these students demonstrated the advances they had made as blossoming engineers and professionals who will create impactful solutions for the future.

SIUE Emeriti Strengthen Educational and Faculty Programming with Sponsorship

In 2014, the SIUE Emeriti Faculty Association launched its initiative to support faculty projects aimed at strengthening the academic quality of programs and enhancing the University's reputation. For 2015, the Emeriti Association continues its initiative by sponsoring such diverse projects as a mathematics colloquium series, a visiting musician, a visiting researcher and a bio-fuels technology inquiry lab.

Founded in 2013, the Emeriti Association provides opportunities for retired faculty to remain active participants of the SIUE community. In addition to providing members access to the University, the group has worked with the Faculty Senate and The Graduate School to create a new fund to support current faculty members and their academic programs.

The association's yearly awards competition provides funding for projects that would not otherwise receive support through the University. This year's awards will enhance the Departments of Mathematics and Statistics, Music, Biological Sciences and Pharmaceutical Sciences.

The Mathematics and Statistics Department received an Emeriti Association grant to strengthen the quality of its program through colloquia and a speaker series. Drs. Marcus Agustin, Zenia Agustin and Tammy Voepel will invite two recognized experts in the mathematical sciences to speak to faculty and students on research topics related to specializations in the department. These research colloquia will promote the programs and serve as a recruitment tool for potential students. Additionally, tour speakers from area universities will also be invited to assist the younger faculty in building research connections. At least one speaker will present at the Math Teachers' Circle to help build a community of area middle school teachers united around mathematics and problem solving.

"The SIUE Emeriti Faculty Association sustains the teacher-scholar ideal through support of the growth and development of the current faculty by giving funds to projects that strengthen the quality of academic programs and enhance the reputation of the University. Just as the emeriti faculty helped build SIUE into an excellent institution, they are continuing their commitment to excellence by supporting the endeavors of the current faculty."

–Dr. Stephen Hansen, Interim Chancellor

Dr. Kelly Barry of the Department of Biological Sciences received funding to integrate authentic biofuels research into an introductory biology lab. Barry will lead a project to develop and test a technology-driven, authentic-inquiry lab focused on research in algal biodiesel technology. In partnership with NCERC, the program aims to better retain student interest in science, and it will assess students' understanding of the scientific process, attitudes toward science, technology, engineering and mathematics (STEM) and their awareness of science in society issues.

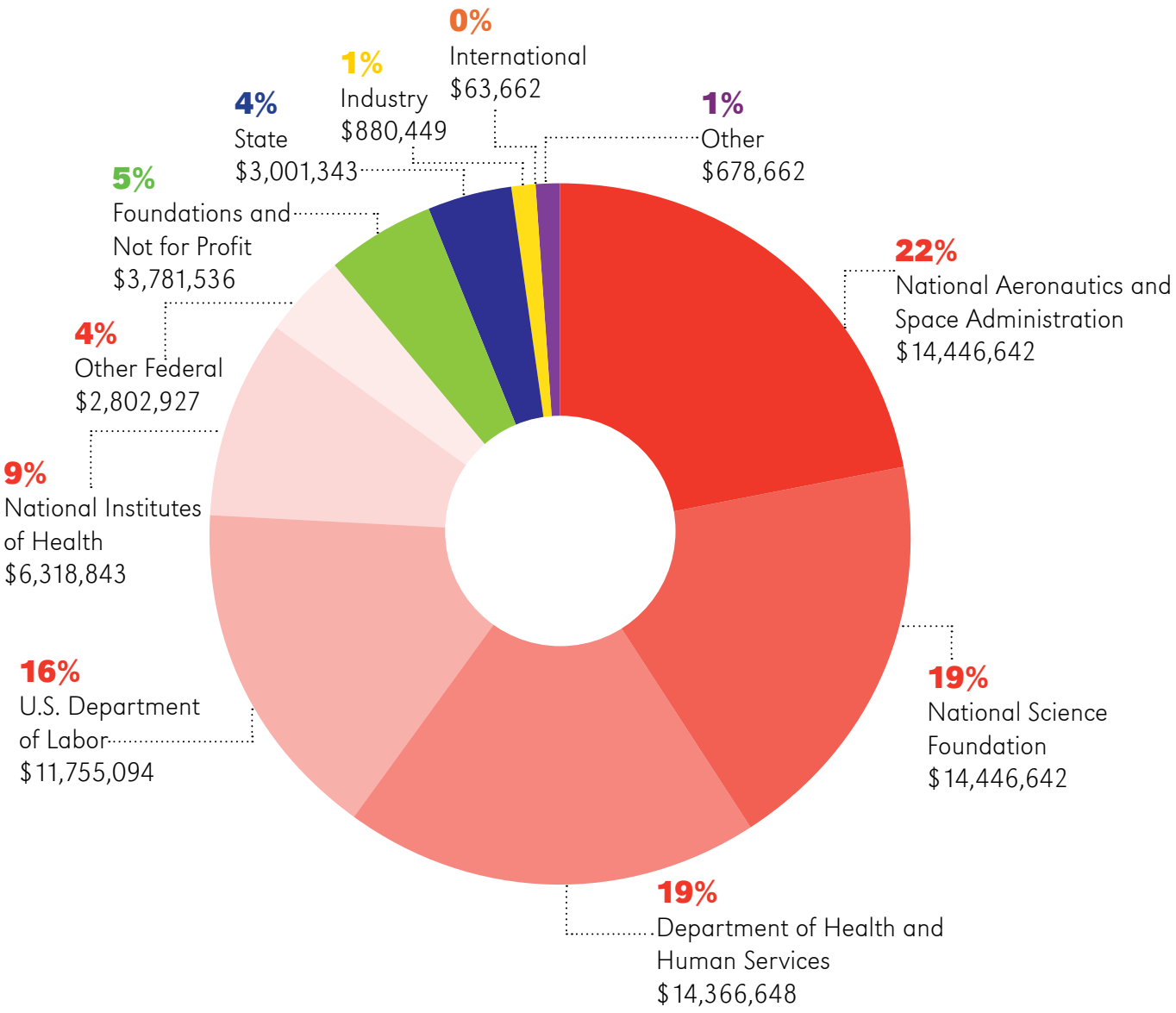
The Emeriti Faculty Association also granted funds to the Department of Music to invite international touring violinist Vadim Repi to teach a master class to SIUE students. Dr. Lenora Anop, professor of violin, will lead the grant, selecting five undergraduate and graduate violinists to perform at the class. The class will be free and open to everyone. Members of the class will attend a Saint Louis Symphony concert featuring Repin. This unique experience will give musicians an opportunity to learn from a world-class violinist and strengthen SIUE's association with the Saint Louis Symphony.

The School of Pharmacy will use Emeriti Association grant funds to teach students advanced lab techniques and introduce them to a well-known medical entomological expert in vector-borne infectious diseases. Drs. Catherine Santanello and Marcelo Nieto have invited Dr. Adriana Troyo from the University of Costa Rica to present seminars and discuss her studies on tick, flea and mosquito-borne diseases plaguing Central and North America. This is also an opportunity for Troyo to develop collaborations with SIUE researchers. Troyo will be collecting local specimens and teaching lab techniques to faculty from the Department of Biology and SIU Schools of Medicine and Dental Medicine.

External Award Summary

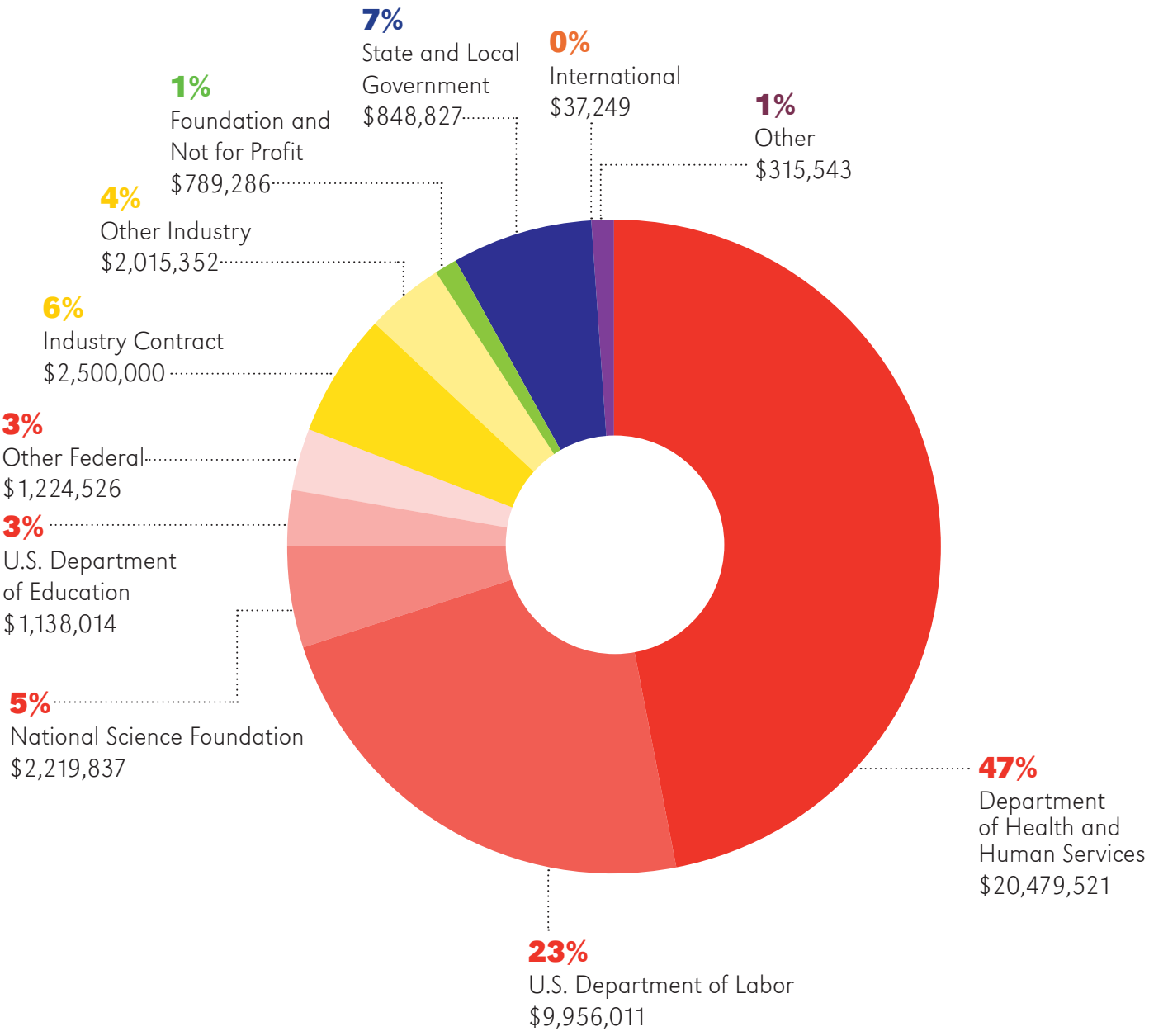
In Fiscal year 2015, SIUE was awarded a record amount of $43 million from external sponsors for research, instructional support and public service. The number of proposals submitted is higher than the previous year and includes a record of $43 million in proposed research projects. Nearly 30 percent of the University's tenured and tenure-track faculty are participating on awarded externally-sponsored projects.

FY15 Proposal Submissions by Agency Type



89% of FY15 proposals were submitted to federal agencies

FY15 Awards by Agency Type



81% of FY15 awards were received from federal agencies

SIUE 2015 Graduate School Internal Grant Award Winners

Annette and Henry Baich Award

The Baich Award is given annually to the most outstanding Seed Grant for Transitional and Exploratory Projects (STEP) grant proposal for basic research conducted within the parameters of the Sigma Xi Society. Disciplines include the physical sciences, life and medical sciences, earth science, engineering, psychology, and mathematics.

Recipient: Dr. Andrew Bartlett, Department of Mathematics and Statistics, College of Arts and Sciences
Project: "Detecting Change-Points Using Extreme Values in a Changing Climate"

Dr. Bartlett began his career at SIUE after earning his PhD in statistics in 2013 from the University of Georgia. He attended the College of Charleston in 2010 and earned an MS in mathematics.

Bartlett's project targets worldwide trends in extreme weather events, the catalyst for debates about whether the planet is experiencing significant climate change. His studies use the notion of "change-point," a statistical measure used to determine whether or not a change in climate represents a significant shift. According to Bartlett, traditional change-point methods focus mainly on detecting changes in the arithmetic mean (climate averages), but he argues the importance of focusing on changes in the frequency and intensity of extreme weather values to get a more accurate measure of significant change.

Bartlett aims to develop a more unified and mathematically justified procedure for detecting change points within a specific climatic time series. He hopes his model will allow environmentalists and climatologists to predict future extreme events worldwide. The project accesses 50 years of independent data to test his method, replicating the process 1,000 times to validate that the methods work on simulated data before applying it to a real data set. Bartlett will then apply his statistical method to real data which will be a real temperature data set collected from Chula Vista, Calif. This data will increase our ability to predict and detect significant changes in the climate.

Vaughnie Lindsay New Investigator Award

The Vaughnie Lindsay New Investigator Award is presented to SIUE junior faculty members to recognize and support individual programs of research or creative activities. The award recognizes faculty members whose research or creative activities have the promise of making significant contributions to their fields of study and to SIUE in general.

Recipient: Dr. Huaibo Xin, Department of Kinesiology, School of Education, Health and Human Behavior
Project: "Physical Activity and Mental Health among Bosnian Refugees"

Dr. Xin joined SIUE in the fall of 2011 as an assistant professor of kinesiology and health education after earning a Doctor of Public Health (DrPH) from the University of North Carolina in Greensboro, NC. Before beginning her career in public health, Xin worked as a psychiatrist and a physician of internal medicine in Shanghai, China.

Xin's project focuses on using community-based participatory research to examine how physical activity can strengthen Bosnian refugees' mental health. Refugee communities are more likely to experience mental distress than the general population due to pre-immigration, immigration and post-immigration traumas. Research has shown the long-term negative effects on the mental health of refugees who experience such traumas as hunger, religious or political persecution, disruption of social support networks, harsh refugee living conditions, and cultural change or economic stress in new countries.

Little is known about how culturally-appropriate physical activity interventions can help mediate some of the effects of refugee mental health challenges.

Xin will explore ongoing mental health issues experienced by members of the St. Louis Bosnian refugee community, tailoring interventions to explore how reliable the Mental Health Inventory-38 can be in predicting mental health concerns in this community, and what challenges and strengths exist when incorporating a sustained physical activity-based intervention. Xin's hope is that this research can illustrate how culturally-appropriate physical activity might help reduce this population's vulnerability to and severity of refugee traumatic experiences.

Paul Simon Outstanding Teacher-Scholar Award

The Paul Simon Outstanding Teacher-Scholar award is presented to an SIUE faculty member who has been recognized as an outstanding teacher and researcher. The award demonstrates the belief that to be a good teacher, one must also be a good scholar. Winners of the Outstanding Teacher-Scholar award have shown significant contributions to original research or creative activities and have successfully integrated those contributions into their teaching practices.

Recipient: Dr. Ryan Fries, Department of Civil Engineering, School of Engineering

Since joining the SIUE faculty in 2008, Dr. Fries has been a principal investigator (PI) or co-PI on more than $2 million in externally funded grants and $50,000 in internal grants. His research activities have led to 25 peer-reviewed journal publications, 23 conference proceedings, 27 professional presentations and five government reports since joining SIUE. Among many notable projects, in 2012, Fries was selected to create an evacuation traffic management plan for the St. Louis Metro East region. He recently led a project aimed at guiding the Illinois Department of Transportation and Illinois Center for Transportation towards meeting new federal regulations about real-time traveler information.

Using his own research as means to train future engineers, Fries includes master's and doctoral students in his activities. He has organized projects for 178 students at 35 different engineering companies or agencies. Fries has also incorporated laboratory experiences into classes. These experiences introduce traffic signals and traffic conditions to students using a driving simulator. Additionally, Fries wrote the textbook used in his graduate-level civil engineering course.

To further benefit students, Fries has published four journal articles and nine conference papers with SIUE graduate students. In 2009 and again in 2013, he was named Outstanding Teacher in the Department of Civil Engineering, and he received the SIUE Teaching Recognition Award in 2012. Overall, Fries' record of accomplishments over the past years illustrates his continuous and high activity in research, an integration of research into his teaching, and a dedication to mentoring students.

2015-2016 Competitive Graduate Award Winners

The Competitive Graduate Award (CGA) program supports highly qualified new graduate students.

Jennifer Addington, Social Work
Krista Akers, Psychology
Jaydn Alexander, Art Therapy Counseling
Yanan Da, Computer Science
Rohini Dahal, Electrical Engineering
Amir Ghanbari Mardasi, Mechanical Engineering
Claire Heyman, Speech-Language Pathology
Hannah Howell, Public Administration
Md. T. Islam, Economics and Finance
Sarah Johnson, English
Emily Krotz, Speech-Language Pathology
Kathleen Lochhead, Art Studio
Caitlin McLaughlin, College Student Personnel Administration
Deependra Mishra, Electrical Engineering
Jacob Ott, Economics and Finance
Matina Shakya, Civil Engineering
Ping Trachsel, Accounting
Jessica Trone, Speech-Language Pathology
Whitney Williams, Social Work
Olana Yadessa, Environmental Sciences

2014-2015 Research Grants for Graduate Student Awardees

Research Grants for Graduate Students (RGGS) awards small grants on a competitive basis to support research initiated and conducted by classified graduate students to enhance their academic progress.

Ayomipo Adeyemo, Environmental Sciences
Sally Ayoob, Biological Sciences
Megan Beurskens, Psychology
Kayla Bimm, Psychology
Qin Cai, Psychology
Narges Choubedar, Mechanical Engineering
Aubree Dahler, Biological Sciences
Shakiba Eslamimehr, Chemistry
Hannah Fyfe, Environmental Sciences
Vineet Garlapally, Environmental Sciences
Hillery Gernhauser, Art Therapy
Sarah Giacomini, Biological Sciences
Kristin Glenn, Art Therapy
Victoria Goodwin, Biological Sciences
Lisa Hebenstreit, Biological Sciences
Lacey Kirkwood, Art Studio
Angela Laaker, Biological Sciences
Jessica Loethen, Biological Sciences
Lalita Mazgaeen, Environmental Sciences
Michael Meyers, Chemistry
Rosemary Morr, Psychology
William Morton, Biological Sciences
Samantha Naumann, Psychology
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Why Choose SIUE?:
Communications Studies Graduate Students Explore

Why choose SIUE? Location, quality education and the University's commitment to diversity are only a few attributes that may attract someone to SIUE. At the request of former SIUE Chancellor Julie Furst-Bowe and University Marketing and Communications, two applied communication studies graduate students and their faculty mentor conducted a study to see what draws students to SIUE. Could it be that the campus is located on 2,600 beautiful acres and only a short drive from St. Louis? Or that SIUE has a student-faculty ratio of 16-to-1 and is one of the most-affordable four-year institutions in Illinois? You may find the top three reasons students attend SIUE surprising.

Student researchers Brett Graham and Keagan Kristoff, and their mentor Dr. E. Duff Wrobbel, associate professor of applied communication studies, conducted focus groups to assess students' reasons for choosing to attend SIUE versus another institution. Of special interest in this analysis was the inclusion of questions asking participants to discuss the experiences of close friends with whom they shared their college-selection process.

The focus groups were comprised of 30 freshmen ranging in age from 18-19 years old. Each session was held in an on-campus conference room and administered by a single graduate student facilitator working with a graduate student assistant. Sessions were audio-taped, and tapes were transcribed by a professional transcriptionist.

The results indicated three different trends for choosing SIUE: relationships, location and cost. When asked why students came to SIUE and what influenced them most, relationships were the highest determining factor. Parents, siblings, friends, faculty members, department chairs, coaches, high school teachers, alumni and even tour guides, all have tremendous influence on student decision making. Another factor influencing the selection of SIUE was location. Interestingly, some students liked that the campus was close to their home, others like that it is far enough away from their home, some that it is close to downtown St. Louis, while others prefer the scenic campus. Affordability was another reason students chose SIUE. The University's low cost was reported as very important to most students and many students gave "cost" as the main reason for selecting SIUE. Among all the wonderful things SIUE has to offer, it is the relationships, location and affordability that attract most students to SIUE.

Acknowledgments

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- SIUE ranks in the top 10 percent of its peer institutions in the U.S. receiving federal funding for research and development.

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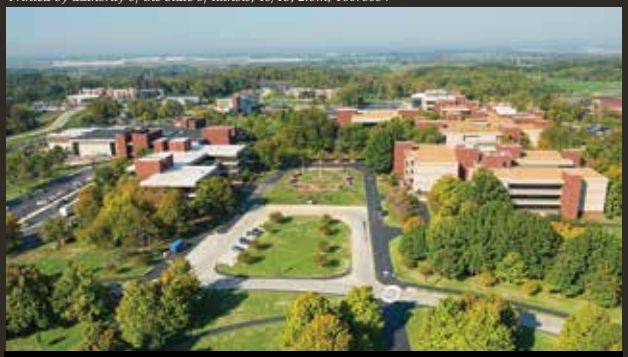

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